

WHAT IS CLAIMED IS:

1. A correction apparatus for correcting a shift
between optical axes in two separate optical units adapted
5 such that a beam emitted from one unit enters the other,
said correction apparatus comprising:

a converter for converting a positional shift
between the optical axes into an angular shift; and

an angular corrector for correcting the angular
10 shift.

2. A correction apparatus for correcting a shift
between optical paths in two optical units adapted such
that a beam emitted from one unit enters the other, said
15 correction apparatus comprising:

a converter for converting a shift between the
optical paths into an angular shift; and

an angular corrector for correcting the angular
shift.

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3. A correction apparatus for correcting a shift
between optical axes in two separate optical units adapted
such that a beam emitted from one unit enters the other,
said correction apparatus comprising:

25 a first angular corrector for correcting an
angular shift between the optical axes;

a converter for converting a positional shift between the optical axes into an angular shift; and

a second angular corrector for correcting the converted angular shift.

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4. A correction apparatus according to claim 3, wherein at least one of said first and second angular correctors comprises:

a reflective mirror; and

10 a tilting mechanism for tilting said reflective mirror with respect to one of said optical axes.

5. A correction apparatus according to claim 3, wherein at least one of said first and second angular correctors comprises:

an optical member using total reflection utilizing a difference between refractive indexes; and

a tilting mechanism for tilting said optical member with respect to one of said optical axes.

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6. A correction apparatus according to claim 3, further comprising:

a first detector for detecting the angular shift between the optical axes;

25 a second detector for detecting the converted angular shift corresponding to the positional shift between the optical axes; and

a controller, connected to said first and second detectors, which controls said first and second angular correctors based on detection results from said first and second detectors.

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7. A correction apparatus according to claim 6, wherein at least one of said first and second angular correctors comprises:

a reflective mirror; and

10 a drive unit for driving said reflective mirror so that said reflective mirror may tilt with respect to one of said optical axes,

wherein said controller controls said drive unit.

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8. An exposure apparatus comprising:

a correction apparatus for correcting a shift between optical axes in two separate optical units adapted such that a beam emitted from one unit enters the other, 20 said correction apparatus comprising a converter for converting a positional shift between the optical axes into an angular shift, and an angular corrector for correcting the angular shift a light source in the one unit; and

an optical system in the other unit, that 25 projects a pattern formed on a reticle or mask onto an object to be exposed with light from said light source.

9. An exposure apparatus comprising:

a correction apparatus for correcting a shift
between optical paths in two optical units adapted such
that a beam emitted from one unit enters the other, said
5 correction apparatus comprising a converter for converting
a shift between the optical paths into an angular shift,
and an angular corrector for correcting the angular shift
a light source in the one unit; and

an optical system in the other unit, that
10 projects a pattern formed on a reticle or mask onto an
object to be exposed with light from said light source.

10. An exposure apparatus comprising:

a correction apparatus for correcting a shift
15 between optical axes in two separate optical units adapted
such that a beam emitted from one unit enters the other,
said correction apparatus comprising a first angular
corrector for correcting an angular shift between the
optical axes, a converter for converting a positional shift
20 between the optical axes into an angular shift, and a second
angular corrector for correcting the converted angular
shift a light source in the one unit; and

an optical system in the other unit, that
projects a pattern formed on a reticle or mask onto an
25 object to be exposed with light from said light source.

11. A device fabricating method comprising the steps of:

5 exposing an object to be exposed using an exposure apparatus comprising a correction apparatus for correcting a shift between optical axes in two separate optical units adapted such that a beam emitted from one unit enters the other, said correction apparatus comprising a converter for converting a positional shift between the optical axes into an angular shift, and an angular
10 corrector for correcting the angular shift, and an optical system for projecting a pattern formed on a reticle or mask onto the object to be exposed; and

performing predetermined processes for the object exposed.

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12. A device fabricating method comprising the steps of:

exposing an object to be exposed using an exposure apparatus comprising a correction apparatus for
20 correcting a shift between optical paths in two optical units adapted such that a beam emitted from one unit enters the other, said correction apparatus comprising a converter for converting a shift between the optical paths into an angular shift, and an angular corrector for
25 correcting the angular shift, and an optical system for projecting a pattern formed on a reticle or mask onto the object to be exposed; and

performing predetermined processes for the
object exposed.

13. A device fabricating method comprising the
5 steps of:

exposing an object to be exposed using an
exposure apparatus comprising a correction apparatus for
correcting a shift between optical axes in two separate
optical units adapted such that a beam emitted from one unit
10 enters the other, said correction apparatus comprising a
first angular corrector for correcting an angular shift
between the optical axes, a converter for converting a
positional shift between the optical axes into an angular
shift, and a second angular corrector for correcting the
15 converted angular shift, and an optical system for
projecting a pattern formed on a reticle or mask onto the
object to be exposed; and

performing predetermined processes for the
object exposed.

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